THE PLANT DISEASE REPORTER

Issued By

THE PLANT DISEASE SURVEY

Division of Mycology and Disease Survey

BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING

AGRICULTURAL RESEARCH ADMINISTRATION

UNITED STATES DEPARTMENT OF AGRICULTURE

SUPPLEMENT 184.

NEW OR UNUSUAL RECORDS AND OUTSTANDING FEATURES OF PLANT DISEASE DEVELOPMENT IN THE UNITED STATES IN 1948

Supplement 184 April 30, 1949

PLANT DISEASE REPORTER SUPPLEMENT

Issued by

THE PLANT DISEASE SURVEY
DIVISION OF MYCOLOGY AND DISEASE SURVEY

Plant Industry Station Beltsville, Maryland

NEW OR UNUSUAL RECORDS AND OUTSTANDING FEATURES OF PLANT DISEASE DEVELOPMENT IN THE UNITED STATES IN 1948

Compiled by Nellie W. Nance

Plant Disease Reporter
Supplement 184 April 30, 1949

Reports to the Plant Disease Survey, from which this information is taken for the most part, indicate that plant diseases in 1948 were generally less prevalent than in an average year. There were no widespread epidemics and losses generally were considerably less than in 1947. 1948 was marked by several unusual features in cereal pathology. Victoria blight of oats seemed relatively unimportant as compared to 1947. Susceptible varieties planted from untreated seeds showed the most infection. Crown rust of oats was less prevalent in some States than in any year previously recorded. This was a year of the lightest leaf rust of wheat for 10 years or more. Tobacco blue mold was generally lighter in 1948 than in 1947. In Georgia tobacco plants were more plentiful than in any year since 1940. Estimated losses from downy mildew of cucurbits were low. Owing to the hot dry weather and adequate control measures late blight of tomato did not reach the epidemic proportions of the 1946 late blight attack. In spite of some severe losses a good crop was grown.

During the year 28 diseases were reported on 26 crops in 34 States in which they had not previously been known to occur, these are presented in Table 1. "New" diseases, i.e. not previously reported to the Plant Disease Survey before 1948, discovered in this country for the first time, or found on a new host are presented in Table 2.

A review of the monthly weather conditions in relation to late blight incidence for the months April through September for the years 1946, 1947 and 1948 is given in the April 1949 issue of the Reporter. The 1948 season was characterized by a somewhat irregular weather picture with a wet spring, mostly in the eastern areas, and a wet early summer followed by a dry August and September.

In the Northwest, the weather after February became less open with

frequent snows and cold rains. The total precipitation from September 1 to April 20 was more than 23 inches and the soils were heavy with excess water. The heavy losses experienced from some diseases were accredited to the unusual amount of rain during the growing season.

Table 1. Diseases reported in States where they had not been found on a particular host until 1948.*

Host Disease (Cause)	Where found	Remarks
OATS		
Downy Mildew, (*Sclerospora macrospora*)	Idaho Indiana (1947)	Infected plants were stunted and their panicles were variously abnormal. Oospores found on leaf blades, sheaths, and glumes. (PDR 33(2):79)
WHEAT		
Leaf Spot, (*Helminthosporium tritici-vulgaris*)	Georgia	Sanford wheat heavily infected with small circular leaf spots. Plants outgrew the disease in one month. (PDR 32(6):275)
ALFALFA		
Stem nematode, (*Ditylenchus dipsaci*)	Georgia Virginia	(PDR 32(8):350 (PDR 32(10):444
Fusarium wilt	Georgia	Found in the same field with the stem nematode (PDR 32(8):350-351)
COWPEA		
Cladosporium spot (*C. vignae*)	California	The disease was apparently introduced by contaminated seed stock. Also found in 1947, but this is first report (PDR 32(1):478)
LUPINE, WHITE		
Brown spot (*Ceratophorum setosum*)	Louisiana	Found in nursery, estimated 50% of planting was affected (PDR 32(7):318)

*For new State-host records of grasses see PDR 32(6):246.

Table 1. (Continued)

Host Disease (Cause)	Where found	Remarks
APRICOT		
Verticillium wilt (V. alboatrum)	Washington	The organism was isolated from the mummies, dead twigs, and the wood of the main limb of specimen. (PDR 33(2): 99)
CHERRY		
Blossom and twig blight (Monilinia laxa)	Michigan	Affected trees were in orchards near the shore of Lake Michigan. (PDR 33(2):96)
PEACH		
Rust (Tranzschelia pruni-spinosae) parasitized by Darluca filum	Texas	Unusual in that rust was observed on peach very early in season during the first week of April. (PDR 32(7):308
PECAN		
Scab (Cladosporium effusum)	Maryland	(PDR 32(9):395)
COTTON		
Verticillium wilt (V. alboatrum)	Georgia	Affected plants showed only slight stunting and little if any reduction in yield. (PDR 33(2): 78-79)
PEANUT		
Root knot (Heterodera marioni)	Alabama	Infection found in only one field, although every plant was infected the disease was most severe in a few localized spots. (PDR 32(10):443)

Table 1. (Continued)

Host Disease (Cause)	Where found	Remarks
PEANUT Rust (*Puccinia arachidis*)	Louisiana	Affected plants were badly "rusty" and defoliated. (PDR 32(11):482)
SAFFLOWER Root rot (cause undetermined)	Nebraska	Introductions from India and Africa are 50 to 100% susceptible. Those from other countries have a high resistance. (PDR 33 (2):73-75)
TOBACCO Etch (virus)	North Carolina	Found on variety Oxford 26. More than 50% of the plants of a 300 plant plot were affected. (PDR 33(2):77)
BEAN Leaf spot (*Ascochyta phaseolorum*)	Washington	This fungus is rarely reported.
BEAN Corral spot	California	Noted in a 110-acre field of Red Kidney beans in San Joaquin County. Symptoms agree with the description of zinc deficiency of beans in Florida. First report on any annual in Calif. (PDR 33(2):93-94)
BEAN, LIMA Anthracnose (*Colletotrichum truncatum*)	Maryland	Leaf infection caused much defoliation; considerable loss from pod infection. (PDR 32(10):450)

Table 1. (Continued)

Host Disease (Cause)	Where found	Remarks
CABBAGE		
Yellows (*Fusarium oxysporum* f. *conglutinans*)	New Mexico	It is believed that the causal organism has been present in southern New Mexico for several years. (PDR 32(8):346)
CANTALOUPE		
Fusarium wilt [*F. oxysprrum* f. *melonis*]	New Jersey	(PDR 32(9):395)
ONION		
Smudge (*Colletotrichum circinans*)	Washington	Widely distributed in the U.S. east of Rocky Mountains. Climatic factors limit the appearance of the disease in the Pacific Coast States. (PDR 32(12):518)
POTATO		
Corky ringspot (cause unknown)	Indiana	Found in a lot of 300 bags of round white potatoes grown in Indiana and shipped to Georgia in November 1948. Inspection certificates showed 30% of the potatoes affected with internal browning or discoloration. This disease was first observed in the U.S. (Fla.) in 1946. (PDR 33(2):95)
AZALEA		
Flower blight (*Ovulinia azaleae*)	Georgia	Both red and white forms were heavily infected in March. (PDR 32(6):275)

Table 1. (Continued)

Host Disease (Cause)	Where found	Remarks
CAMELLIA		
Flower blight (*Sclerotinia camelliae*)	Georgia	Found in a private garden in three widely separated greenhouses as well as on plants growing in the open. (PDR 32(7):317)
GLADIOLUS		
Curvularia spot (possibly *C. lunata*)	Mississippi	Reported in a field of 150,000 plants, both from local and Oregon grown corms. (PDR 32(1):11-13)
	New York	Found in the variety Vredenburg. Stock had come from State of Wash. originally.
	North Carolina	Both leaves and flowers were infected.
	Maryland	Found on the variety Picardy at Beltsville.
	Michigan	Found on the variety Myrna.
	Virginia	Reported in October near Norfolk. (PDR 33(2):66-68)
WEIGELA		
Meadow nematode (*Pratylenchus pratensis*)	Kentucky	Reported from a nursery in Mt. Sterling. (PDR 32(4):133-134)
DOGWOOD, FLOWERING		
Spot anthracnose (*Elsinoë* sp.)	Georgia and Virginia	Reported in Maryland, North Carolina and South Carolina in previous years. (PDR 32(6):253-255)

Table 1. (Continued)

Host Disease (Cause)	Where found	Remarks
ELM		
Dutch elm disease (Ceratostomella ulmi)	Colorado	Evidence of the disease and its carrier Scolytus multistriatus was observed in January. Origin of this disease in Colorado is not known. (PDR 32(7):317)

Table 2. Diseases found in this country for the first time in 1948 = *; diseases found on new hosts = **.

Host Disease (Cause)	Where found	Remarks
WHEAT		
Leaf spot (Selenophoma donacis var. stomaticola) *	Idaho and Washington	Causes a small circular ashy spot with a narrow surrounding border. (PDR 32(9):392-394)
SOIL SAMPLES (Heterodera punctata)*	North Dakota	British workers think that Agrostis is the normal host of this species. Originally described by Thorne as the cause of poor growth of wheat in Saskatchewan. (PDR 33(3):130-131)
AVOCADO (Persea americana, P. a. var. drymifolia) Verticillium wilt (V. alboatrum)**	Five counties in southern Calif.	Apparently the first report of this fungus on a member of the Lauraceae. (PDR 33(1):42)
PLUM (Prunus umbellata) Rust (Tranzschelia prunispinosa var. typica)**	Georgia	Noted in a plum thicket. (PDR 33(1):19)

Table 2. (Continued)

Host Disease (Cause)	Where found	Remarks
STRAWBERRY var. KLONMORE		
"Variegation" (genetic)	Louisiana	In a one-half acre field of Klonmore strawberries, 75% showed "variegation". (PDR 32(10):442)
DAHLIA		
Scab (*Actinomyces scabies*)**	North Carolina	Found on dahlia roots. Disease noted on only two of fifteen varieties grown. (PDR 32(10):449)
AFRICAN VIOLET		
Meadow nematode (*Pratylenchus* sp.)**	Maryland	Found on two plants of the "Ionantha" variety.
Root knot (*Heterodera marioni*)**	Maryland	Found on a plant of the "Plum" variety. (PDR 32(6):256)
OAK (PIN AND RED)		
Root disease, nematodes associated *Hoplolaimus coronatus*** possible cause and meadow nematode (*Pratylenchus* sp.)** also found.	Delaware Delaware District of Columbia	First noticed in 1943. 50 to 60% of pin oaks in Wilmington showed symptoms. Definitely found only in Wilmington but symptoms also noticed in D.C., Md., Pa., and N.J. (PDR 33(3):132-133)

AVENA SATIVA. OATS:

In Arkansas, H. R. Rosen reported that the fall of 1947 was very dry and this had much to do with late planting, poor seed bed preparation, and poor stands. Nevertheless, there was a 5 percent increase in total oat acreage over 1946-47 and a continued shift from spring to winter oats. Arkansas oat growers have largely turned to growing winter oats, and he stated that this shift has probably occasioned a marked change in the kind and prevalence of both nonparasitic and parasitic diseases. However, so far as the general pathology of the crop is concerned, the change in varieties has perhaps as much to do with changes in disease prevalence as the shift from spring to fall planting. Rosen pointed out that the 1948 data on diseases, based in part on a 2,000-mile survey of oat diseases conducted in May and June, is in line with previous findings relative to the unimportance of Helminthosporium blight compared with anthracnose and Helminthosporium leaf spot in Arkansas.

1948 marked the third successive year in which anthracnose (Colletotrichum graminicolum) was very common and probably the most destructive parasitic disease. During the survey not a single oat field was found that did not show considerable anthracnose. Last year a conservative estimate of reduction in yield due to this disease was given as 5 to 10 percent, and since there was fully as much anthracnose in 1948, the loss this year would not be lower than this. (PDR 33(1):31-35).

Erysiphe graminis, powdery mildew. Varietal reaction of oats to powdery mildew as observed in Virginia was reported by Curtis W. Roane. (PDR 32(9):391).

Fusarium nivale, snow mold. C. M. Haenseler reported that following a severe outbreak of snow mold on winter oats in February 1948, at the New Jersey Agricultural Experiment Station, Forkadeer, Lee, Pioneer, Stanton, Traveler, Winter Turf, Wintok and CI4316 were tested for resistance on plots replicated three times. Traveler showed a total of 110 snow mold spots and Winter Turf 225, while none of the other varieties showed any infection. (PDR 32(5):175-176)

Helminthosporium victoriae, blight, was reported extremely light in Kentucky as compared to the past two years according to D. A. Smith and L. M. Josephson. (PDR 33(1):36-37). K. Starr Chester reported that the disease became widespread in Oklahoma following a trace last year (PDR 32(7):321). In Arkansas, H. R. Rosen reported that despite the continued increase in acreage of Victoria derivatives, and an increase in Helminthosporium blight, average State yields continued to increase so that 1948, with an average of 32 bushels per acre, represented a rising peak in increased production, which has continued for three consecutive years. It seems that this disease is relatively unimportant in Arkansas

as compared with anthracnose and Helminthosporium leaf spot. (PDR 33(1): 31-35)

Puccinia coronata, crown rust, was less prevalent in 1948 in Arkansas than in any previous year recorded. The complete failure to find any crown rust in commercial fields of winter oats was probably due to an exceptionally cold March, a relatively dry April, a very cool first half of May and also a substitution of resistant varieties for the older susceptible types.

Pyrenophora avenae, Helminthosporium leaf spot, in Arkansas seemed next in importance to anthracnose. It was found in every oat field and on every plant examined. British workers have been unable to find any resistant varieties. Taking the State as a whole the estimated amount of leaf area lost was about 10 to 15 percent. (PDR 33(1):31-35)

Red spot mosaic of oats (presumably due to a virus or virus complex) has been observed since 1942 on various oat varieties in Arkansas according to H. R. Rosen. The disease appeared to be most destructive, especially in the spring on winter oats, but a crop that appears a failure may recover within a month and yield as high as 90 bushels to the acre. He stated that field observations of this disease during the past seven years indicate that compared with some other diseases, it is not important economically on the varieties grown at present. No evidence was obtained as to the introduction or transmission of the disease (PDR 32(5):172-175).

HORDEUM VULGARE. BARLEY:

T. T. Hebert and G. K. Middleton reported occurrence of a mosaic disease of barley in a nursery in North Carolina. They state that the disease is probably caused by one or more strains of the wheat mosaic virus. (PDR 32(10):435-436)

Puccinia hordei, leaf rust, in Oklahoma, according to K. Starr Chester, was almost totally absent. (PDR 32(7):321)

Septoria passerini, leaf spot. Chester reported that in Oklahoma barley was more heavily attacked by this disease than at any past time in the memory of many cerealists. (PDR 32(7):321)

TRITICUM AESTIVUM. WHEAT:

R. W. Leukel reported that in April 1948 specimens of wheat collected in Spartanburg County, South Carolina were badly infected with Dilophospora alopecuri, along with some nematode (Anguina tritici)-infected plants. These plants were collected about 40 miles from the infected field found in 1946. Leukel visited the field in May and estimated a loss of about 20 percent in a large part of it. It seemed probable that the disease

was introduced by means of infested seed from some distance. The first report of occurrence of this disease in the United States came from a farm in Greenville County, South Carolina in 1946. The farmer stated that he had used wheat from the infected crop for seed in the fall of 1946, but it had been cleaned and dipped in blue-stone solution. No nematode infection was found in either the 1947 or the 1948 crop. Apparently the 1946 treatment along with crop rotation had eliminated the nematode disease and along with it also the Dilophospora disease, since the latter is dependent on the former for its maintenance. (PDR 32(7):291-292)

Puccinia rubigo-vera var. tritici, leaf rust. Chester and Preston made an experimental forecast of wheat leaf rust in Oklahoma for 1948. Owing to a drought in the fall of 1947, the new crop was not planted until November or even December, the usual infection of seedlings by airborne rust spores from the North thus being prevented. Leaves of rust susceptible wheat varieties examined at 10-day intervals from February 1 to March 31, 1948, at Stillwater revealed not a single rust pustule in the seven samplings. An extensive survey throughout the wheat growing counties of the State showed a negligible amount only in the south-western corner of the State (PDR 32(5):176-181). Later Chester reported: "As predicted April 1, this has turned out to be a year of the lightest leaf rust of wheat for at least a decade and possibly much longer". (PDR 32 (7):321).

Tilletia spp., covered smut. By July the 1948 wheat crop in Oklahoma was showing an unusual amount of covered smut according to Chester. In Custer County a 160-acre field was found to be 80 percent infested with smut and was plowed up. Another large field in Harper County also showed 80 percent smut by count. In Grant County fields were infested to the extent of 20 to 35 percent. In Garfield County in many fields combines raised a continuous black fog of smutty spores. The varieties found smutty were Red Chief, Early Triumph, and Early Blackhull wheat. This was said to be the heaviest outbreak in a decade, and is considered the heaviest in the memory of many older wheat growers. Two reasons were given for the 1948 outbreak, (1) growers got careless about using control practices, (2) weather conditions of last fall were ideal for development of a smutty crop. (PDR 32(7):321)

Ustilago tritici, loose smut, was reported present in Kentucky in all commerical fields inspected and infection varied from a trace to 3 or 4 percent. (PDR 33(1):36-37)

DISEASES OF FORAGE AND COVER CROPS

BROMUS INERMIS. SMOOTH BROME:

Rhizoctonia solani. This fungus "causes a disease of Alta fescue lawns and is a limiting factor in the establishment and persistence of smooth brome grass and birdsfoot trefoil in pasture mixtures at Beltsville, Maryland. During the summer seasons of 1947 and 1948, this fungus caused

severe damage to spaced plants of fescue and brome grass in nurseries and to turf plots of these grasses in pure stand and mixtures. Trefoil in pure stand and mixtures was also severely attacked. A conspicuous leaf spot symptom was produced on the grasses, and infected plants were weakened and frequently killed outright. Surviving plants of the grasses and trefoil had some ability to recover. Damp, humid, warm weather favored disease development and dense, heavy vegetative growth was most susceptible to invasion by the fungus. The fungus mycelia grew rampant on all foliage parts and infection took place at ramdom." (J. Lewis Allison and others. (Phytopath. 39(1):1)

FESTUCA ELATIOR var. ARUNDINACEA. ALTA FESCUE. See under BROMUS.

LOTUS CORNICULATUS. BIRDSFOOT TREFOIL. See under BROMUS.

LUPINUS SPP. LUPINE:

Ceratophorum setosum, brown spot. J. L. Allison and others reported the results of a lupine disease survey made in March in the Southeastern States; they state that the most serious disease observed was brown spot, reported for the first time in the United States last year. (PDR 32(4): 133). In 1947, nothing was known about its distribution in this country, however, this survey revealed its presence in all localities visited. They give a brief discussion of its symptoms since the disease is so new to our country (PDR 32(5):181-184). (See also Table 1)

MEDICAGO SATIVA. ALFALFA:

Virginia reported an unusual amount of forage crop diseases during 1948. This can be accounted for largely because of the unusually wet, cold period during March and early April and the continuous wet weather in many parts of the State. Ascochyta imperfecta, black stem, was unusually prevalent. The disease started in late February in some parts of the State and continued throughout the summer. Winter injury combined with black stem, and in some cases improper fertilization accounted for the killing of the plants in spots of certain fields. Sclerotinia trifoliorum, stem rot, was a serious disease in the eastern part of the State for several years. In 1948, stem rot was less severe than in past years. Peronospora trifoliorum, downy mildew was present in early spring and late fall, but the damage was small. Ditylenchus sp. stem nematode, caused a new disease in Virginia, on one farm in Henrico County. Four leaf spots were observed and Fusarium wilt was found in several fields. (PDR 33(2):90-91) Also in North Carolina, alfalfa diseases were reported prevalent and more severe than usual during the last two months of 1948. Common leaf spots, yellow leaf blotch, and black stem could be found in many fields in early November. These diseases increased in severity during November to such an extent that by early December defoliation and death of stems was a conspicuous feature in many fields. An unusual number of rainy days occurred in November, more than twice the normal amount of rain having fallen. Likewise the early part

of December was rainy and rather warm. These conditions apparently accounted for the severity of these diseases in North Carolina during the last of the year. (PDR 33(2):89-90)

TRIFOLIUM SUBTERRANEUM. SUBCLOVER:

Yellow bean mosaic (virus). Frank P. McWhorter and John R. Hardison reported that seeds of the Tallarook variety of subclover procured from Australia were brought into Oregon by plane in 1947. These seeds were planted in the fall of 1947 near Oregon City. Seeds harvested from this first planting were used, September 1948, to plant a seed increase plot. This plot was ruined by a virus disease and had to be plowed under. Following a course of studies it was concluded that this infection was not introduced on the seed and that the disease was due to local strains of bean virus 2. (PDR 33(2):86-88)

DISEASES OF FRUIT CROPS

FRAGARIA SPP. STRAWBERRY:

Further studies on the cause of strawberry root rot in Oregon were reported by P. W. Miller. The results obtained demonstrate that under Oregon conditions strawberry root rot is not due to a single factor but to several agencies. In addition to the widely distributed and well-established red stele disease (Phytophthora fragariae) there are two types of cortical root rots, brown root rot and black root rot. He stated that brown root rot is evidently due to the combined action of certain weakly parasitic fungi and adverse soil conditions, while black root rot is apparently primarily induced by the dessication of the roots during the digging and planting processes and may possibly also be induced by drying under summer drought conditions. (PDR 32(7):315)

According to J. B. Demaree, the strawberry yellows virus disease or xanthosis is rather widely distributed, although unrecognized, in eastern strawberry plantings. The spread of strawberry yellows from diseased to healthy plants is contingent upon the presence of the aphid (Capitophorus fragaefolii), the only insect vector of this disease. The distribution of this vector in the Eastern United States is not known, but in the three Pacific Coast States it is widely distributed. It is believed that the greatest concentration of virus-infected plants is in the middle Atlantic States. He described some differences in symptoms between eastern and western occurrence and stated that control in the East will be easier because of the scarcity of the vector. (PDR 32(10):428-432)

MALUS SYLVESTRIS. APPLE:

Venturia inaequalis, scab. R. S. Kirby in summarizing the incidence of apple diseases in Pennsylvania in 1948 as well as for the 20-year period ending in 1948 stated that scab was more severe in 1948 than it had been during any of the 20 years that records had been taken. Other diseases,

such as sooty blotch and Brooks spot, which come late in the summer, were below average. (PDR 33(2):99-103)

PERSEA AMERICANA. AVOCADO:

Verticillium albo-atrum. According to George A. Zentmyer a severe wilt and dieback of avocado trees was identified during 1947-1948 as caused by this organism. The fungus was isolated from trees of the Fuerte variety, a budded Guatemalan variety, and Guatemalan seedlings under conditions of natural infection. Affected trees were found on both Mexican and Guatemalan root stocks. Scattered diseased trees were found in all of the commercial avocado districts of California. Some of the affected groves were previously planted to tomatoes. Apparently the disease was previously attributed to excess moisture of the soil. (Phytopath. 39(1):26)

PRUNUS SPP. CHERRY:

Little cherry virus. Carl W. Nichols has given evidence indicating that there may be two strains of the little cherry virus in Idaho. The affected fruit in the northern part of the State exhibited symptoms similar to those found in Washington, while in the southern part the pedicels were shorter, the new growth of trees which have been infected for a number of years showed shortening of the internodes resulting in a rosetted appearance, and the leaves had undulated margins. In a further note the author stated that the first survey for the disease was carried out in the summer of 1948. Of 59,173 trees inspected, 901 were found to be infected, the majority being in Gem, Nez Perce, and Payette Counties. A program for the voluntary removal of diseased trees was initiated (PDR 32(10):433-434). B. L. Richards and others reported that the western "X" virus is a cause of "little cherry" in Utah. "Transmisson studies during the past two years have established the fact that 'little cherry', as it is recognized in Utah, is an expression of the Western "X" virus in the sour and sweet cherries on Mazzard root stock." (Phytopath. 39(1):19)

PRUNUS ARMENIACA. APRICOT:

Xanthomonas pruni, bacterial spot. H. H. Thornberry and others reported observations on bacterial spot in Illinois. In addition to the lesions on peach twigs, some spring canker infections were found on apricots and also on peach nursery seedlings which had been budded but not cut back. This is the first record in Illinois of spring cankers on apricot and nursery seedling peaches. Overwintering of cankers on apricot twigs was also reported. (PDR 32(7):306-307)

PRUNUS PERSICA: PEACH

Glomerella cingulata, bitter rot, was reported by John C. Dunegan and Joyce Kephart on peaches from Maryland and Georgia (PDR 33(1):18).

Taphrina deformans, leaf curl, has been particularly abundant in central and northern California according to Emlen Scott. It was not uncommon to see unsprayed trees with no normal leaves. (PDR 32(8):351). Peach leaf curl caused extensive losses during the unusually wet cool spring of 1948 in the Willamette Valley of Oregon, according to Adin P. Steenland. Most of the curled leaves fell from the trees but a few remained attached. It was on these leaves that the brown rot (Monilinia laxa) sporodochia were found. This is believed to be the first report of sporodochia of Monilinia laxa on leaves. The sporodochia were found on both twigs and leaves in an orchard at Brooks, Oregon. (PDR 33(4):203-204)

Xanthomonas pruni, bacterial spot, see under PRUNUS ARMENIACA.

RUBUS SPP. CANE FRUITS:

Brown berry disease and mild streak of black raspberry (Rubus occidentalis) in the opinion of J. B. Demaree are two distinct virus diseases. The occurrence of the two diseases in the same field or on the same bush is merely coincidental. Inspections of black raspberry fields revealed high incidence of mild streak symptoms with those of brown berry, and brown berry symptoms in the absence of mild streak. He stated that the symptoms of the two diseases can be easily distinguished. Brown berry, as observed by him in Pennsylvania and Ohio, the only two States from which the disease has been reported, causes only one to several fruits in a berry cluster to die during the green stage, they then turn brown and become dry, hard, seedy and cling tightly to the receptacle. Unaffected berries in a cluster ripen normally. The most characteristic symptoms of mild streak do not show until the berries are ripening, when they lack luster, remain small, and are poorly flavored; all berries on infected bushes are diseased. Pulp and juice are reduced, but the berries are not dry and never turn brown (PDR 32(6): 251-252). According to reports mild streak is widespread in Maryland blackberry plantings.

DISEASES OF NUT CROPS

P. W. Miller reported on nut diseases in Washington and Oregon in 1948. (PDR 33(1):20-21):

CORYLUS SP. FILBERT:

Xanthomonas corylina, bacterial blight, was widely distributed in 1948, occurring in practically all filbert orchards in western Oregon. It was most prevalent in young orchards, from 1 to 3 years of age, causing the death of many young trees.

Phyllactinia corylea, mildew, occurred in varying amounts in many orchards in western Oregon in 1948. However, it was of no economic importance since the disease did not make its appearance until very late in the season.

Filbert shrivel (non-parasitic) characterized by a shriveling of the kernels, was widely distributed in the Pacific Northwest in 1948, occurring to some extent in practically every orchard in Oregon and Washington.

Leaf scald (non-parasitic) was widely distributed in the Pacific Northwest in 1948. The disease was much worse in orchards located on relatively shallow soils with low reserves of soil moisture.

JUGLANS REGIA: PERSIAN WALNUT:

Armillaria mellea, mushroom root rot, caused the death of a limited number of mostly seedling Persian walnut trees in Oregon in 1948.

Xanthomonas juglandis, blight, was widely distributed in the Pacific Northwest in 1948, causing greater loss than normal. In certain non-sprayed Persian walnut orchards in western Oregon, losses from this disease ranged up to 50 percent of the potential crop. However, for the whole region it was estimated that about 25 percent of the unsprayed crop was either destroyed or affected by the disease.

Leaf scorch (non-parasitic) was widely distributed in the Pacific Northwest in 1948, occurring to a greater or less extent in most Persian walnut orchards in this region. In orchards on certain soil types deficient in boron it was very prevalent. Application of borax in sufficient quantities to the soil generally decreased the amount and severity of this disorder.

Walnut shrivel (non-parasitic). This disorder, Miller reported, was more prevalent and severe in the Pacific Northwest in 1948 than it had been for many years. For the region as a whole it was estimated that about 25 percent of the 1948 crop was affected. It was believed that the occurrence of two weeks of abnormally hot, drying weather at the critical time of filling of the nuts, with accompanying moisture and associated nutritional deficiencies, was largely responsible for this disorder.

DISEASES OF SPECIAL CROPS

BETA VULGARIS. SUGAR BEET:

Puccinia aristidae, rust, was first noticed in Nebraska in 1947. One field near Scottsbluff showed about 2 percent of the plants infected. In 1948 the aecial stage was found in amounts not exceeding a trace. The uredial and telial stages of the fungus were found to be quite prevalent on saltgrass, Distichlis stricta. The diseased sugar beets were found in the vicinity of the rusted saltgrass (M. L. Schuster and W. W. Ray, PDR 33(1):41).

CARTHAMUS TINCTORIUS. SAFFLOWER:

Puccinia carthami, rust, was first observed on breeding material in Nebraska in 1947. A trace of rust was observed on some greenhouse plants during the winter of 1947-1948. In July rust was found in the experimental field plots adjacent to the 1947 plots. Immune plants were ob-

served in introductions from Rumania and Turkey. It is thought that this rust is spread to new areas by seed (C. E. Claassen and others. PDR 33(2): 73-75)

GOSSYPIUM SPP. COTTON:

Rhizoctonia solani, damping off, caused considerable damage to cotton stands in the Mesilla Valley of New Mexico. Leyendecker attributed the unusually high incidence of the disease to the below normal temperatures prevalent immediately following planting. In badly damaged fields random counts ranged from 10 to 85 percent infection. (PDR 32(7):299-300)

NICOTIANA TABACUM. TOBACCO:

Fusarium oxysporum f. nicotianae, Fusarium wilt, is becoming very general over Kentucky where a few years ago it was almost unknown according to W. D. Valleau and S. Diachun. (PDR 32(12):505-507)

Heterodera marioni, root rot, in Virginia, according to S. B. Fenne was much more prevalent this year than in the past several years. This is the first year that a large number of farmers have sent in specimens of rootknot-diseased tobacco. (PDR 33(2):75-76)

Peronospora tabacina, blue mold, of tobacco in the warning service area in 1948 is summarized in Supplement 178, December 30, 1948 (see its index pp. 289-291). Blue mold was first reported late in February in the tobacco growing areas of North Florida, possibly earlier than usual. Warm weather in March and the application of fungicide retarded the activity of the fungus. In the Lower Rio Grande Valley of Texas this fungus was active all through the winter on Nicotiana repanda. In Georgia the disease was observed February 6 in Cook County. The source of infection was thought to have been hold-over on tobacco plants surviving in 1947 beds. All tobacco beds of South Georgia became affected by blue mold during the period February 6 to April 15. Disease spread was slow with no marked peak of activity. Overall plant loss from the unusually light attack was estimated at not over 3 percent of the plants. This was in contrast to 85 percent loss in 1947. Plants were more plentiful in 1948 than any year since 1940. In Tennessee, blue mold was first reported on April 28 in Greene County, becoming widespread throughout East Tennessee and the Cumberland Plateau. Considerable loss for the State, but no acute shortage of plants was reported. In South Carolina, although the disease appeared early (March 15), it spread slowly, and caused little damage in 1948 as compared to 1947 and 1946. Near the end of April blue mold was found in Simpson County, Tennessee, and during the next 10 days it reached central Kentucky.
There was a gradual spread until the disease was general but very mild over the entire tobacco growing areas of the State. Blue mold in North Carolina occurred throughout the flue-cured and a part of the Burley area. It was most severe in beds on old sites in all cases. The disease was generally lighter this year than in 1947. In Virginia and West Virginia, blue mold was of moderate severity. In properly sprayed beds it was well controlled.

Blue mold was first observed in Pennsylvania on August 4 in Lancaster County; spread was slow and little loss was incurred. Blue mold damage in New England was very light in 1948, owing to adequate spraying and dusting. Canada reported blue mold in the new tobacco belt of Ontario about the middle of May; a few days later it was noted in the old tobacco belt. During the latter part of the transplanting season the disease was prevalent throughout all Ontario tobacco-growing districts (except east of Toronto), although overall damage was mild owing to the large percentage of growers using control measures. Weather conditions throughout the critical period were not unfavorable for development of the disease. Some field damage was noted in June and July in Ontario. Quebec, the oldest tobacco-growing area of Canada remained free of the disease.

Phytophthora parasitica var. nicotianae, blackshank, continued to spread throughout the State of Virginia, according to S. B. Fenne. It appeared in Sussex and Greensville Counties for the first time this year. The disease is now found in 14 counties. In general, the Vesta strains proved very resistant to blackshank. (PDR 33(2):75-76) E. L. Moore and others reported on black shank, and Bacterium solanacearum, Granville wilt, in North Caroline. They stated that black shank has been spreading with increasing rapidity during the last two or three years and it now occurs in nearly all of the 62 flue cured tobacco producing counties. Eleven counties had from two to four times as many fields infested in 1948 as in 1947. Five counties were so badly infested that it is thought advisable to grow only varieties resistant to the disease. However, varieties that are best from the standpoint of yield and quality have only fair to moderate resistance. On the other hand losses due to Granville wilt in the central and eastern part of the State have been reduced by the use of the resistant variety, Oxford 26, from 50 percent of the crop in certain areas to less than 5 percent. Since black shank is spreading to fields infested with Granville wilt, there is a rapid increase in the overlap of the two diseases. The writers stated that results indicate that it is possible to develop higher yielding wilt resistant varieties, and that wilt and black shank resistance together can be combined with improved yield and quality. (PDR 33(4):183-186)

Pseudomonas tabaci, wildfire. Severe outbreaks of wildfire occurred in both Kentucky and Tennessee according to W. D. Valleau, S. Diachun, and Howard E. Heggestad. In Kentucky this was the most extensive outbreak over the State as a whole that had occurred in over 30 years. The loss in many fields amounted to one-third of the crop. In Tennessee this development has been associated with increased prevalence of the disease in recent years. This year wildfire was present in approximately 75 percent of the burley tobacco fields of East Tennessee. Considering both damage to seedlings and the severe losses in the field, they reported wildfire the most important disease present in this area. (PDR 32(1):505-508)

Thielaviopsis basicola, black root rot. Valleau and Diachun reported that with over 90 percent of the burley crop in Kentucky set with resistant

varieties the losses from black root rot were very slight (PDR 32(12): 506).

Streak (virus). According to Valleau and Diachun in some of the North-Central counties of Kentucky, streak was reported as being unusally severe and spreading extensively. (PDR 32(12):506)

DISEASES OF VEGETABLE CROPS

BRASSICA OLERACEA VAR. CAPITATA. CABBAGE:

Xanthomonas campestris, black rot, was reported by H. R. Garriss and D. E. Ellis as being unusually prevalent in North Carolina this season. Infection ranged from a trace to 85 percent of the plants (PDR 32(10): 451). A. H. Eddins reported the worst epidemic of black rot ever recorded for northern Florida during the season of 1947-48. A few fields were abandoned before cutting because of excessive head rot and in some fields almost 100 percent of the plants were affected with black rot at the last cutting. It was found that the disease may be carried over in the soil from one crop to the next. The only cabbage fields free of black rot were those set with plants grown in non-infested soil from black-rot-free seed (PDR 32(7):319). Outbreaks of this disease in Mississippi were both numerous and severe in the early spring of the past two seasons, according to Douglas C. Bain. Observations indicated that most of the outbreaks originated in plants grown from diseased seed. (PDR 32(9):396)

W. D. Valleau and Stephen Diachun described a leaf spot of seedling cabbage growing in a hotbed on the farm of a market gardener in Kentucky. The leaf spot was associated with unbalance of nitrogen and phosphorus. (PDR 32(5):193)

CAPSICUM FRUTESCENS. PEPPER:

Peronospora tabacina, downy mildew, was reported on pepper in Florida by W. B. Tisdale. Two farmers brought the material to his laboratory on March 1 and 2. The disease was generally distributed over the beds. (PDR 32(4):130)

Ring spot (virus). Over 50 percent of the pepper plants in a field in Massachusetts showed what appeared to be tobacco etch virus. The pepper bed was adjacent to the tobacco bed, both having grassland and weeds adjacent. (PDR 32(12):518-519)

Sclerotium bataticola, charcoal rot, was described by P. A. Young as causing a wilting of pepper plants in 5 fields of the California variety of bell pepper near Troup, Texas. One to 20 percent of the plants were wilting or dead with a disease of previously unknown cause. The fungus was found in the xylem of the bases of nearly all the tap roots of the cuttings. (PDR 32(11):482)

CUCURBITS. CUCUMBER, MELON, SQUASH:

Erysiphe cichoracearum, powdery mildew. The occurrence of this mildew seems rare in Florida according to G. K. Parris, who reported a case observed this year (PDR 32(7):301).

Fusarium solani f. cucurbitae, root rot, developed in "Crook Neck" yellow squash grown for seed in Oregon, according to Frank P. McWhorter, who stated that it was serious in the affected field (PDR 33(1):10).

Alternaria cucumerina, leaf spot, appeared on cucumber foliage near Scappoose, Oregon in 1946, and 1947 and again in 1948 a severe outbreak occurred on the Marketer variety near Eugene, Oregon, according to McWhorter (PDR 33(1):10).

Pseudoperonospora cubensis, downy mildew, of cucurbits is summarized in Supplement 178, December 30, 1948 (see its index pp. 289-291). The northward spread of this disease in 1948 was rather slow, it having first appeared in February in the Everglades area of Florida on squash and cucumber plantings. Its development was checked in Virginia by the dry weather, but it gradually moved northward after a three-week interval at a time when harvest was already underway thereby causing little damage. It was reported as far north as Massachusetts. There were no reports from New Jersey, New York or Connecticut, but occurrence was reported in Tennessee. The hot dry weather and the use of sprays and dusts checked the spread and severity of the disease. Estimated losses were low.

Mosaic, (virus). Glenn S. Pound reported that for the last three years, watermelon and muskmelon plantings in a south central Wisconsin area were affected with a virus disease. Ten percent of watermelon plants were infected in some fields. In certain symptoms, properties, and host range, the virus appeared similar to the tobacco ringspot virus. (Phytopath. 39(1):19)

The PDR Supplement 180, dated January 30, 1949 is devoted to "Cantaloup Mosaic Investigations in the Imperial Valley." The University of California and the U. S. Department of Agriculture in cooperation with the Cantaloupe Pest Control Committee of the Imperial Valley, have undertaken a joint project designed to investigate all phases of the cantaloupe mosaic disease. This disease has caused damaging losses to the cantaloupe growers of the Imperial Valley during the past three years and threatens to become a major disease in other producing areas of the Southwest. The results of preliminary investigations by staff members assigned to the project are reported in this Supplement.

LACTUCA SATIVA. LETTUCE:

Aster yellows (virus) was reported by J. G. Leach as a limiting factor preventing the establishment of lettuce growing in the Canaan Valley of

West Virginia. (PDR 32(10):451)

LYCOPERSICON ESCULENTUM. TOMATO:

Phytophthora infestans, late blight. Paul R. Miller points out that the devastating epidemic of tomato late blight in 1946 led to a demand for an effective forecasting service, which was established in February, 1947 by the Plant Disease Survey, covering 32 eastern States. The successful operation of this service resulted in the authorization of the Research and Marketing forecasting project which now functions as a warning service for late blight of potatoes as well as tomatoes and downy mildew of cucurbits (Pseudoperonospora cubensis) and downy mildew of tobacco (Peronospora tabacina). These diseases are widespread in the eastern part of the United States in which the project is now operating as in 1947. This region has been divided into three smaller regions, the northeastern, southeastern and north-central with a State Experiment Station in each region serving as headquarters. The service operates through key pathologists designated to work with it in each State and each cooperating Province in Canada. The key men send reports on dates and places of first appearance, weather of the past week, spread of disease to new areas, and losses incurred. The reports are promptly assembled by the Plant Disease Survey into a warning letter and sent to the key reporters and the Agricultural Insecticide and Fungicide Association. The key pathologists are responsible for making this information available and issuing control measures (PDR 32(5):160-166). Tomato late blight in the warning service area in 1948 is summarized in Supplement 178, December 30, 1948 (see index pp. 289-291). In certain localities the disease as a whole seemed more severe than in 1947, perhaps it was more scattered; however, it followed the Atlantic Coast States and extended into the tomato canning areas in some midwestern States. Owing to control methods by adequate spraying or dusting and the hot dry weather the disease did not reach the epidemic proportions of the 1946 late blight attack. Losses ranged from 2 to 40 percent of the acreage planted. In spite of these losses a good crop was grown.

R. A. Hyre discussed trapping sporangia of Phytophthora infestans as an aid in forecasting the development of late blight. "A series of 8 spore traps was established from Virginia to Rhode Island. The traps consisted of 1 x 3 inch vaselined slides held in a vertical position in a vane, and changed daily. In a period of about two months, 13 sporangia were trapped, with some question as to the identity of five of them. Late blight always occurred within 12 miles of the traps prior to the time the sporangia were caught. These data indicate that the traps were of little practical value for forecasting the early occurrence of late blight in 1948." (Phytopath. 39(1):10)

Blossom-end rot. James G. Horsfall described conditions accompanying an unusual occurrence of tomato blossom-end rot in Connecticut, on July 8. Ecological conditions that brought on the disease were at the opposite pole from the normal. (PDR 32(8):351)

Spotted wilt (virus) in Nebraska was limited to Lincoln and its suburbs in 1948, according to A. F. Sherf. Certain weeds and ornamentals are suspected as overwintering hosts of the virus. In one 20-acre field in which 50 to 60 percent of the plants developed spotted wilt, the severest infection occurred adjacent to small patches of field bindweed. (PDR 32(1):509)

PHASEOLUS VULGARIS. BEAN:

Botrytis cinerea, gray mold. Leo Campbell reported that an unusual amount of rain during the growing season was responsible for serious damage from gray mold to Blue Lake beans in western Washington. (PDR 33(2):91)

Sclerotinia sclerotiorum, white mold, according to Vaughan and Dana has been recognized in the Pacific Northwest for twenty-five years as a disease of minor importance on a wide variety of hosts including some vegetables. More recently intensive culture under irrigation of vegetables for processing has favored the increase of this disease in such a crop as the Blue Lake type of pole beans. Because of the actual and potential importance of this disease on beans a joint program of investigations was initiated in 1947 by the Oregon Experiment Station and the U.S. Department of Agriculture. In tests of various materials used as sprays or dusts to control white mold on Blue Lake beans, bismuth subsalicylate gave marked reduction of aerial infection; of interest also is the observation that control of basal infections and of aerial infections was roughly parallel. (PDR 33 (1):12-15)

RAPHANUS SATIVUS. RADISH:

Fusarium oxysporum f. raphani, wilt, was observed and recognized for the second time in California, (the first in San Benito County in 1934) in one planting in Monterey County, in 1948, causing heavy loss. (PDR 33 (1):9)

SOLANUM TUBEROSUM. POTATO:

Bacterial red xylem disease. In Maine, according to Folsom, Getchell and Bonde potato tubers showed at harvest time and in storage a reddish discoloration of the xylem and often a depressed but not discolored, corrosion of the tissue at the stolon scar, caused by an unnamed bacterium the characters of which they describe. The pathogen has been isolated from various parts of infected tubers, which are often of a large size. The data indicate that the organism often enters the tuber through the parent plant, but the perpetuation of the disease through the infected seed tubers could not be demonstrated, because the pathogen disappears from the xylem during the storage period. (PDR 32(6):230-231)

A. H. Eddins in his annual report on incidence of diseases in the Hastings, Florida, potato-growing section reported that the excessive rainfall of 5.08 inches from January 21 to 24 during the middle of the

planting period water-logged the soil and much seed was destroyed by soft rot (Erwinia carotovora) in several thousand acres. (PDR 32(7):302)

Wilt; cause not determined. Wilts, caused by Fusarium oxysporum and Verticillium alboatrum, according to Karl H. Fernow, are usually assumed to have less relationship to seed than to soil. He stated that a wilt of Cobbler and Sebago in New York appeared to be definitely related to the seed. Tubers in affected hills showed a superficial hydrosis extending from 1 mm. to 1 cm. into the flesh. These spots were visible from the outside. They occured near the eyes and at the seed end. It is believed that this symptom has not previously been reported in connection with any potato wilt disease. (PDR 32(10):450)

Phytophthora infestans, late blight, of potato in the warning service area in 1948 is summarized in Supplement 178, December 30, 1948 (see its index pp. 289-291). Potato late blight was found in the fall crop of potatoes in Louisiana, in December it was found in Florida. Its origin was traced in many instances to diseased seeds, cull piles, and infection from tomato plantings. The disease was not severe in 1948, however, it was, perhaps more scattered following the Atlantic Coast States, and was found in Louisiana, the Ohio Valley States, Great Lake States, Iowa, North and South Dakota, eastern Canada, and an isolated place in British Columbia. Dry weather, and adequate dusting and spraying prevented widespread development of the disease. Losses ranged from 1 to 20 percent; on the whole they did not exceed in many cases those for 1947.

W. J. Martin reported on strains of Phytophthora infestans capable of surviving high temperatures. "Attempts to explain the unusual occurrence in recent years of late blight in the fall crop of Irish potatoes in Louisiana led to a study of the reaction of the different isolates of Phytophthora infestans to high temperatures. Cultures of the different isolates on navy bean infusion agar were exposed at 36°C. for varying times. After exposure, the cultures were kept at 20°C. for several days after which transfers were made to determine whether they were still viable. Eight different isolates were used, including four from Louisiana, three from Minnesota, and one from Cornell. The maximum time survived by the isolates was as follows: The four Louisiana isolates, 6 days; the three Minnesota isolates, 4 days; and the Cornell isolates, less than 6 hours." (Phytopath. 39(1):14)

Avery E. Rich reported marked differences in resistance to late blight attack in potato variety trial plots at the Northwestern Washington Experiment Station. He stated that it is possible that the variations obtained here from those obtained in other parts of the country might be due partially to the presence of different strains of the pathogen. (PDR 33(1): 11)

ZEA MAYS var. SACCHARATA. SWEET CORN:

Pseudomonas stewarti, bacterial wilt or Stewart's disease. A. W. Poitras and N. E. Stevens published reports of experienced observers on bacterial wilt of sweet corn for the years 1945-1948. For these years, available evidence indicated that the abundance of bacterial wilt is closely correlated with the temperature of the preceding winter, as was the case during the years of their earlier observations (PDR 33(3):161-165). G. H. Boewe presented data indicating that the late or leaf blight stage may develop to cause severe loss following lower winter indexes than are required for the early or wilt stage of the disease. Data indicated that a moderate to severe leaf blight epidemic may develop when the winter index has been 85 or slightly above, that light epidemics may occur when the winter indexes lie between 80 and 85, and that only a trace or no disease may develop when the winter index is below 80. (PDR 33(4):192-194)

DISEASES OF ORNAMENTALS

AZALEA:

Ovulinia azaleae, azalea flower blight, was conspicuous by the absence of sclerotia on blighted azalea flowers in the Baton Rouge area, Louisiana (May 17), according to A. G. Plakidas. This is in contrast to what occurred last year when every blighted flower, on the bush or on the ground, had from one to several sclerotia on it. He stated that it will be of interest to note what effect the failure of sclerotial development will have on the incidence of the disease next year (PDR 32(7):320). An outbreak of flower blight occurred in Gainesville, Florida during the third week of March following an 8 inch rain during the first 10 days of the month according to G. F. Weber. He stated that this outbreak was an expected response of this fungus under almost ideal conditions of humidity and temperature. The spread of the disease was rapid. There was no visible difference in resistance or susceptibility detected. (PDR 32(5):194)

Yellowing and necrosis (undetermined). According to D. L. Gill this trouble has been observed for the past two years in the South. The disease was rather widespread in 1948 as compared to 1947. In two fields approximately 90 percent of the plants died, while the remaining ones were inferior. Diseased plants were observed in North Carolina, Georgia, Alabama, Mississippi and Louisiana. The symptoms of the disease are described. Several possible causes of the trouble -- drouth, nutritional deficiency, soil infesting organisms, virus, soil acidity, and insecticide toxicity -- have been considered. (PDR 33(4):202)

CHRYSANTHEMUM SPP.

Deuterophoma spp. Kenneth F. Baker and others reported the association of two undescribed species of Deuterophoma with the obscure stunt disease of chrysanthemum in California. The chrysanthemum stunt disease has become generally important over the United States since 1946. No definite

causal agent has yet been found, but it is generally considered to be a virus. (PDR 33(1):2-8)

DIANTHUS CARYOPHYLLUS. CARNATION:

Fusarium poae, bud rot, was found in early December 1948 in a carnation greenhouse at Kennett Square, Pennsylvania. The disease was present on Joan Marie and Northland Varieties. Many buds of the Joan Marie variety were rotted and considerable loss in this variety was being experienced by the grower. One infected bud was found in the variety Northland. Mites (Pediculopsis graminum) described as always associated with the disease were present. This disease is seldom found. (W. D. McClellan, PDR 33(3): 136)

GLADIOLUS SPP.

McWhorter reported that as far as he knows Curvularia leaf spot of gladiolus has not been found in Oregon. During the 1948 season intensive surveys of diseases of gladiolus were made in all parts of the State where gladiolus are grown. (PDR 33(4):207)
(See also Table 1)

The influence of climate on incidence of Fusarium rot and dry rot in gladiolus corms is discussed by C. J. Gould. "Fusarium rot (F. oxysporum f. gladioli) the most troublesome disease of gladiolus corms in eastern and southern United States, is also severe in eastern Washington, but uncommon in western Washington except on recently introduced stocks. Dry rot (Sclerotinia gladioli) is the most important corm disease in the latter area. To study the role that climate plays in the development of these two diseases, corms of the variety Picardy were obtained from a stock that was severely infected with both diseases. Apparently healthy unhusked corms were selected from this stock and grown in the comparatively cool climate of western Washington at Puyallup, and in the warmer climate of central Washington at Sunnyside. At harvest, 76 percent of the nontreated western Washington-grown corms had dry rot and 5 percent had Fusarium rot. Comparable figures for the eastern Washington-grown corms were 17 percent and 32 percent, respectively. Temperature is believed to be the primary factor responsible for these differences. Average temperatures from May through September were 60°F. at Puyallup and 67°F. at Sunnyside. These results and previous observations indicate that rotation between different climatic areas might be a useful supplement to standard measures for controlling dry rot and fusarium rot in commercial gladiolus corms." (Phytopath. 39(1):8).

Stemphylium sp., leaf spot, described by Robert O. Magie, has caused loss to cut-flower growers in Florida annually during the past ten years. Two-thirds of the acreage was planted to one of the susceptible varieties, Picardy. Fungicides have not provided complete protection from this disease. (PDR 32(8):344-345)

PRIMULA MALACOIDES. PRIMROSE:

Enation disease. Frank P. McWhorter and W. C. Price reported an enation disease of primrose, cause unknown, in a Conservatory at Pittsburgh, Pennsylvania. In the case of peas, where the cause is known to be a virus, most of the enations originate on the under side of the leaves whereas the primrose enations observed always arose on the upper surface. The plants showing crenate veins were among a planting of about a thousand that were grown in pots in fresh potted soil. The history of the planting indicates that the disease was introduced in the seed. (PDR 32(8):345)

DISEASES OF TREES

ACER MACROPHYLLUM. BIGLEAF MAPLE:

According to Wagener and others a disease of undetermined cause was first noted in 1944 on the Lassen National Forest in California. Since 1946, it has been abundant in the northern Sierras, the Sacramento and Klamath River drainages, and throughout the coast mountains of northern California. In 1947 and 1948 the disease was prevalent in the upper Rogue River area of southern Oregon, and in 1948 was observed to be widespread in the Umpqua National Forest of southwest Oregon. The symptoms of the disease suggest that a virus might be responsible. (PDR 33(4):195-197)

ARBUTUS MENZIESII. PACIFIC MADRONE:

In the spring of 1948, considerable damage to Pacific madrone by foliage diseases was noted at several localities in the Siskiyou Mountains of northern California. The greatest amount of tree killing was observed in the vicinity of Happy Camp on the Klamath River. However, some tree killing and extensive foliage killing was observed in other localities of northern California and southern Oregon. Wagener and others named several fungi found on the diseased foliage. They considered Cryptostictis arbuti and Didymosporium arbuticola the most important. However, Rhytisma arbuti was prevalent on the affected leaves and some Mycosphaerella arbuticola was found. (PDR 33(4):195-197)

CORNUS FLORIDA: FLOWERING DOGWOOD:

Botrytis leaf and flower blight was reported in the Metropolitan New York area by P. P. Pirone. This was among the more unusual fungus diseases of trees that appeared this spring, which was the wettest spring in seventy-seven years. The disease caused much concern to owners of dogwood trees, most of whom reported they had never seen this disease before. (PDR 32(8): 349-350)

Elsinoë corni, spot anthracnose. R. A. Jehle and Anna E. Jenkins listed new records of this disease found on flowering dogwood in Maryland, Delaware and Virginia on a roadside survey conducted in 1948. (PDR 33(4):198-201)

EVERGREENS:

Winter injury. In Wisconsin, according to the State Department of Agriculture, never within the memories of some of the oldest nurserymen have

they witnessed such a disastrous winter as was the 1947-48 one. A State-wide survey conducted by the Department revealed that hundreds of thousands of dollars damage had been done. The injury was prevalent throughout the Lake State Regions. Practically every species of evergreens suffered the ravages of this winter catastrophe. The Department stated that danger of winter injury to ornamental evergreens can be reduced by making certain that the ground is thoroughly soaked with water before it freezes in the fall and by applying a mulch during the late fall to avoid deep freezing of the soil. (PDR 32(9):394-395)

MAGNOLIA SPP. ORIENTAL MAGNOLIAS:

Microsphaera alni, powdery mildew, has been observed in nurseries in the vicinity of Mobile, Alabama, during the past three years. Frequently no infection can be found on M. soulangeana growing beside severely affected M. liliflora. The disease has not been seen on M. stellata. Nurserymen control the disease by the use of copper sprays, usually Bordeaux mixture. (D. L. Gill, PDR (4):203)

PINUS ECHINATA. LITTLELEAF PINE:

Phytophthora cinnamomi, W. A. Campbell reported P. cinnamomi associated with the fine roots of little leaf-diseased shortleaf pine in Georgia and South Carolina. This is particularly interesting in view of Copeland's (O. L. Copeland. Some relations between soils and the littleleaf disease of pine. 4 p. ms. to be submitted to Journal of Forestry) observations that the disease is most serious on soils with poor internal drainage. Littleleaf is a widespread and locally serious disease of shortleaf pine in the Southeast (PDR 32(11):472). In a further note, Campbell described a method of isolating P. cinnamomi directly from the soil. (PDR 33 (3):134-135)

PINUS PONDEROSA. PONDEROSA PINE:

Unusual prevalence of some foliage diseases on forest trees in the Pacific Coast States during the last few years, accompanying abnormally cool and wet spring seasons are reported by Willis W. Wagener and others. Elytroderma deformans developed in severe form on ponderosa pine in many localities east of the Cascade Mountains during the last three years, particularly in the Ochoco and Whitman National Forests. (PDR 33(4): 195-197)

PSEUDOTSUGA TAXIFOLIA. DOUGLAS-FIR:

Rhabdocline pseudotsugae, the needle fungus was very prevalent on the foliage of young trees of Douglas-fir in northern Idaho and northwestern Montana in 1947 and was responsible for much of the excessive dropping of needles from the Christmas trees. In 1948 the disease was even more severe. (Wagener & others, PDR 33(4):195-197).

QUERCUS SPP.. OAK:

Hoplolaimus coronatus. Association of this nematode with a new root disease of oaks in Delaware was reported by Viggars and Tarjan. They stated that plantings of pin oak, Quercus palustris, have been observed severely affected by a new and extremely virulent trouble in Wilmington, Delaware. As early as 1943 symptoms of the condition were apparent and have increased in severity until roughly 50 to 60 percent of the pin oaks there are showing symptoms. The red oak, Q. rubra is also affected, but not so severely as pin oak. The symptoms of the disease are described. The authors also reported the finding of meadow nematodes (Pratylenchus sp.) in pin oak, a new host for this pathogen, at Wilmington, Delaware. This discovery was substantiated by the finding of meadow nematodes also in oak roots in the District of Columbia by Mrs. C. Lewis, of the Division of Nematology. (PDR 33(3):132-133) (See also Table 2)

SALIX SPP., WILLOW:

Fusicladium saliciperdum, scab, was reported by M. C. Richards and A. R. Hodgdon as being responsible for severe defoliation of willow trees in New Hampshire (PDR 32(11):483).